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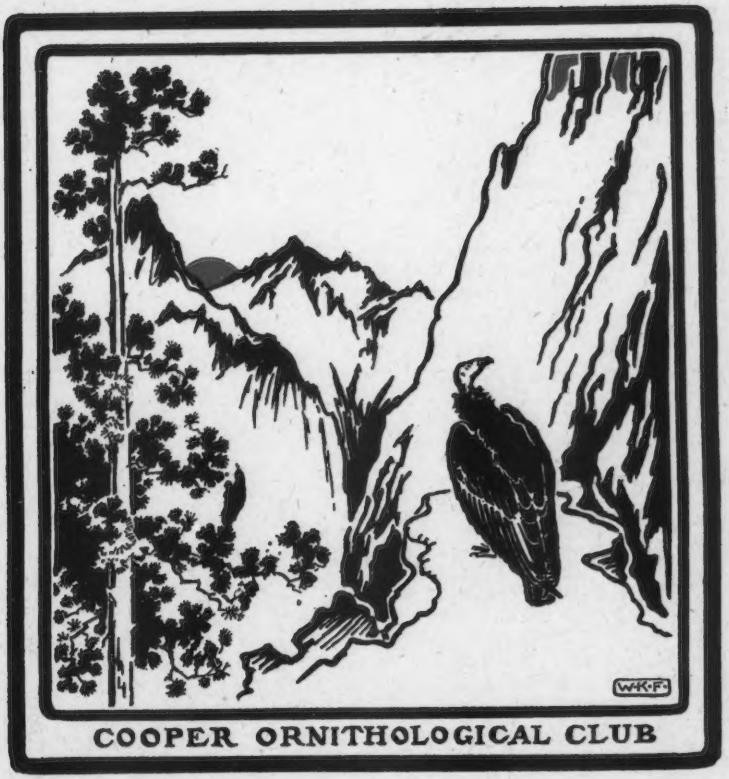
THE CONDOR

A Magazine of Western Ornithology

Volume XXIII March-April, 1921 Number 2



COOPER ORNITHOLOGICAL CLUB

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Volume XXIII | March-April, 1921 | Number 2

[Issued March 31, 1921]

THE BIOGRAPHY OF NIP AND TUCK

A STUDY OF INSTINCTS IN BIRDS

By LOYE MILLER

A MEASURE of unwelcome clouded the arrival at my office of Nip and Tuck, a cloud, to be sure, not realized by those unheavenly twins, yet none the less distinctly a cloud. Nor did they realize anything within or without beyond the supreme crisis of their unlimited hunger. For that matter, how much farther does the appreciation of any three day infant extend? Naked, blind, and helpless little linnets they were, thrown upon the care of a human foster parent by some agency that had destroyed their natural habitation and its builders. A paper carton from the delicatessen counter, a mattress and a coverlet of cotton batting, a pair of dissecting forceps, a medicine dropper, and a willing but not over sanguine human male constituted the equipment to which they fell heir. It was not a fair substitute for the natural abode and the tireless parents which had been theirs for the three days of their existence outside the shell. Nor was it a fair chance that they had for survival, yet it was a fighting chance and the brief story of that fight with some of the things they taught their foster parent (we learn much from our children) is offered you for what it may be worth.

The foster parent whom necessity forced upon these naked "cell aggregates" (that's all they were) happened to be a biologist and an educator with, very naturally, the conviction that education is the supreme refinement of biology—a treatment of the highest function of the highest animal. Somewhere during his biological communings he had gotten the impression that linnets are strictly vegetarian in diet and that the young are fed by regurgitation of partially digested food from the parent crop. Something had to be done rather promptly to simulate the natural food of the starving waifs if their lives were to continue. Where should one more naturally turn than to the department of Domestic Science? That department was in charge of a mother, so the appeal of helpless infancy met with an instant and a hearty response. Whole wheat bread constituted the initial step in the building up of the artificial schedule of dietetics. Why? Because the cooking had brought about therein a series of chemical changes comparable, in a measure, to those fermentative changes worked upon weed seeds within the parent's crop. What next? The lining of the crop in some birds secretes a chemically perfect milk containing butter fat, cheese, and milk sugar. Probably young linnets receive some such product mixed with their fare of cracked and partially di-

gested seeds pumped from the parent's crop into their yawning mouths. The probability seemed strong enough, at any rate, to warrant the trial of dairy milk as the fluid medium and, behold, a time-honored baby food was the result, bread and milk. Quite a long and laborious process of reasoning to arrive at so simple a prescription as bread and milk, you may think. Yes, but you know one of the great values of scientific education is that it offers a good excuse for continuing to do some of the things we have done for generations anyway—if they happen to please us.

The interesting part of the whole matter was the final and wholly satisfactory influence upon the twins. Let me remind you in the words of that homely philosopher of the day's fiction, Mr. Dooley, "Af ut worrks uts roight." What better test could be asked for an experiment than that it succeed? Here was a scientific theory and a homely, common sense practice operative to a perfectly satisfactory result. The biologist and educator, who believed in the synonymy of his two titles, was delighted. More to the point, the twins were, too.

From that time on until their comparative independence in food gathering, Nip and Tuck throve upon bread and milk, corn flakes and milk, shredded wheat and milk, or some equally grano-lactose combination. "So are we kin to all that is."

To the parent of mere human offspring who has labored days (and nights), months and years to navigate the customary shoal waters of croup, measles, whooping cough, etc., the almost explosive suddenness with which the successive growth stages in birds appear is little short of startling. After the first day of readjustment to a new regime the twins were carefully weighed each morning at the same hour on delicate chemist's balances. Results for the first twenty-four hours had to be checked over repeatedly before the unassailable facts could be credited: The twins had gained 24.3 per cent in weight since the previous day at the same hour! Is it surprising, then, that feathers seemed almost to pop from their skins to cover an infant nakedness? What wonder that each morning seemed to show a change in appearance since the night before? Much of that stuffing of bread crumb and milk had been transformed by the alchemy of biology, into baby bird instead of into the human deity which is so commonly the product of that homely ambrosia. What wonder that young birds are little else than digestive apparatus surrounded by a relatively thin wall of potentialities? They need all that laboratory of digestion. Digestion and assimilation are their chief business and they attend to that business pretty strictly. As is usually the case, attending to business produced good results and within fifteen days Nip and Tuck had changed from speckled, pale blue eggs to feathered birds able to fly up hill.

Of course the biography of every infant must take cognizance of his dawning mentality as evidenced through the oracle of the first spoken word. What vast interpretations are placed thereon! How profoundly interested everyone else is supposed to be! Long tedious months must elapse before even his mother can claim for the child that he has indulged in articulate speech. During that time unlimited volumes of baby talk have been poured in upon the plastic matrix of his brain cells without tangible result. Ultimately, however, our words come back to us with growing distinctness, though regrettably they too often bear those mutilations of the mother tongue which have been poured into his ears as "baby talk" and which later have to be unlearned. Of whatsoever nationality, caste, or hereditary strain the infant may be, the speech of

the nurse becomes the first tongue of the child. Is it so with birds? Do the little ones learn by their mother's twitterings?

The early speech of Nip and Tuck was a matter of great concern, therefore, to their foster parent. At the time of their adoption into human society their vocal expression was limited to a subdued squeak inaudible at a distance greater than a yard. What possibilities were there for training such voices and fashioning them to an ideal set by the teacher? Educators are wont to stick their fingers into the plastic clay of childhood merely to see how perfectly their thumb prints may be impressed. Why not try out a theory on the twins? Do the offspring acquire a vocabulary by imitation or do they inherit it through the generations? Parent linnets, during visits to the nestling young, utter a very definite note of constant character. If another note were substituted and were sufficiently frequent in its repetition, would that sound be acquired by the young? Since the twins were obliged to accompany their new parent to and fro on a ten mile trip daily, there was every reason to believe that the dominant musical influence of their impressionable period would be the song of a Ford engine. However, with the commendable optimism of the educator who believes that a small leaven of uplift will raise the sodden mass of grosser influence, the foster parent set to work to administer that uplift.

The linnet's feeding note was carefully avoided and, in its place there was given the sharp, ringing note of the Canyon Wren, and on this auditory diet the little birds' receptive centers were fed during the period of infancy. Would they first lisp in the language of linnet or that of the Canyon Wren? Would the chromosome of inheritance yield to the stimulus of environment? Not so, as we shall see. With the growing strength of the young birds, the squeak increased in volume up to a limited maximum. Then on a certain morning Nip awoke from his after-breakfast nap and burst forth with an entirely new note, not a mere squeak, but a truly vocal sound, the perfect call of the young linnet. Despite his artificial upbringing, Nip had discovered himself a true linnet and spake in the tongue of his ancestors. Tuck soon followed in the way of the more progressive Nip and the infantile squeak was no more heard. Nip and Tuck had refused "baby talk". Again the cheerful educator pocketed his failure and consoled himself that he had gained by his loss—through his failure had a new truth been established.

Perhaps such a result should have been expected from an attempt to modify those more fundamental notes we might designate the call notes, but what of the more superficial, the more complex and variable character, song? Voice quality in birds is largely, it would seem, a matter of structure of the vocal chords and hence is conveyed by the bearers of heredity as definitely as are the characters of beak or claw. Song, however, may be modified as to its sequence of notes, and some highly imitative birds of varied vocal power have been taught a variety of performances.

Not discouraged by the seeming failure of the first attempt at uplift, the uplifter therefore continued his effort at vocal education throughout the growth period of his charges, in the hope of influencing the song of the male. Was it disappointment or was it secret satisfaction over a substantiated theory that held first place in the biologist's mind when, six weeks later, just before the necessary interruption of the intimate association of pupil and teacher, Nip burst into his first song? It was a song he had never heard before and had never rehearsed, the tribal song of his fathers.

That there are instinctive responses on the part of animals to certain qualities in sound is a matter of common experience. The distress quality in bird notes is difficult to define and may sometimes be wholly imaginary, yet it is many times the stimulus of an instinctive response. Individuals representing many varieties of birds will, in a state of nature, come hurrying through the woods, each one giving its own call, to the spot where a bird of an alien race is uttering its note of distress. It was interesting in this connection to observe the response of these young linnets to the distress call of chicks, a sound entirely foreign to their individual and, doubtless, to their racial experience. The little birds were kept upon the lecture room desk where their frequent meals could be administered by student or by instructor with a minimum of disturbance. One morning, while the twins were serenely quiet beneath their cotton blanket, a discussion of the quality of bird sounds brought about the illustration of a certain point by an imitation of the chick's distress call. Immediately the cotton blanket was heaved up and two excited young linnets tumbled about in the nest in response to the stimulus of a sound they had never before heard. The incident means much to us when we consider the many times we have seen the distress calls of excited bird parents rouse the nest full of young to efforts at flight. We so often say that the mother is teaching her young to fly when, in reality, all she is doing is to apply unconsciously a stimulus. An Anglo-Saxon reared pack mule when treated to a series of expletives in Mexican-Spanish, gets the same psychic message from his driver as though he were an accomplished linguist. So Nip responded to the complaint of a lost chick by rising up on his wobbly legs and uttering the call note of his race.

I am obliged to confess to an undercurrent of guilty feeling within me when I recognize in my own offspring a perfectly orderly sequence of events as they develop the grasping reflex, the suckling reflex, or later on, the self assertion and the play instincts, a chain of natural traits that follows the law of a million ancestors. It seems a bit underhanded, especially in the presence of that other and happily less analytic partner in the infant's ancestry, even to admit the possibility that ours is not the first child who has performed such a wonderful and so perfectly adorable a trick. However, no such sense of treachery marred my pleasure in watching the twins' orderly progress. That progress was so rapid that it seemed like twenty years of human experience concentrated into a twenty days resumé. Sometimes there even arose a half formed wish that human young might be still more biologic than they are. Take the bathing instinct as an illustration. One day the very masculine Nip, without coaxing of any zealous parent but wholly from some inward urge, took a bath and made an impressionistic toilet. Oh, that our own young might feel that heaven-born inspiration toward clean hands and a smooth part!

Really though, the trouble is not with our children but with our own impatient selves. If we were willing to wait fourteen long years for that tornado of new instincts at adolescence, we would find that even the human male would think of his personal appearance and would voluntarily wash at least the front part of his face and polish the toes of his boots. Nip waited six weeks for the inspiration toward cleanliness, but it came all in good time. Let me not be understood as favoring fourteen years of unwashedness for boys. No indeed. We must live with them and some of us actually enjoy the living, artificial as life may seem to the boy. But isn't it interesting to note how four-

teen years of ineffectual training (or of nagging) will slough off like an old pupa skin and the urge finally come from within?

Another great source of friction between the generations, and a thorn of tribulation for both, is table manners. Would the twins learn to eat properly? How the educator did labor with his adopted offspring only to find that his efforts went for nought. For three weeks they were fed with medicine dropper and tweezers. The subjects performed most dutifully. They came to the finger at "mess call", opened their mouths, and gulped their portions in proper bird fashion. Then, all at once, Nip refused this infantile treatment and would not open his beak. He was not the victim of green apples nor of eating between meals, for, when the food dropped from the tweezers, Nip picked it up and made his meal man fashion. The time had come to put away childish things and they were put away. He was never again fed by hand. Now, although she was born at the same time as Nip, little Miss Tuck was always a goodly bit behind him in development of her instincts. Despite the splendid example of the precocious Nip and the labored efforts of the foster parent, who felt that his most tedious task should be at an end, Tuck refused to pick up her food. The table would be set before the two and Nip would plunge in with boy-like exuberance, bent solely upon the engulfing process. Tuck would see the food and recognize it, would open her mouth and beg, seemingly entreating it to come and satisfy her craving. The tweezers would pick up morsels and dangle them before her and she would follow the movement with open mouth, but never, unless the lining of the beak was touched, would she seem to get the proper stimulus for taking food. For five days this ineffectual effort at education continued, then the proper instinct ripened as it had in Nip, and Tuck picked up her own food. The ripening, however, was incomplete and for three weeks at the beginning of each meal she continued to beg to be fed.

I wonder why we parents of human young are so intolerant of the petty bickerings that arise between children—children, too, who are really fond of each other. A distracted mother or even the less intimately associated but short-memoried father, may wonder where, in their long line of respectable ancestors, those children picked up so much quarrelsomeness. We worry about such things. On the other hand, how cunning are little puppies, or above all things, little bear cubs! They tussle and growl and chew at each other as they roll and scuffle in the straw. We laugh at them. Is not the cub quarrel due to the natural development of individuality, the birth of the ego? At any rate it seems to come in the natural course of events in cubs, human or otherwise. The tendency should be recognized even though society demand that it be curbed. Nip and Tuck, being normal infants, developed the quarrel instinct at the proper time in their history. There was nothing to quarrel over, there was plenty of perch room and plenty of food—yes, and plenty of plebeian "human nature", or animal nature, taking its natural course. All at once the combative instinct appeared and they quarreled over nothing. As Uncle Remus would say, "Dey quarr'l 'an quarr'l' jes like folks." Here was good evidence that Nip and Tuck were developing normally and the foster parent rejoiced in that normality. The quarrels didn't last long and they were so fascinatingly human.

Again the fond and sometimes censurable parent takes pride in the lack of self-consciousness of its offspring. The child is taught all manner of "cute tricks" which it performs that the older folk may be politely amused. Final-

ly comes a day when the child is afraid, it hides its face and screams or else it retires behind the mask of a child's immobile stare. Often he is punished for being naughty, wilful, or silly while the chagrined and disappointed parent may make more of a fuss and disturbance over the matter than does the child itself. The visitor, according to his lights, feels sorry for the one or for the other. Nip and Tuck, brought up by hand, were on very intimate terms with their foster parent. They performed most cleverly for visitors, coming to the finger to be fed, allowing themselves to be warmed in the enclosing hand, or to be transferred from cage to table freely. There was no consciousness of self or of the parent. But one morning the instinct of fear had come. Like a migratory warbler flying at night, all at once it was there, and Nip was afraid of me. He would not come to call, he would not tolerate approach. He saw this great creature through different eyes, the eyes of self-consciousness, and he was afraid. He had never been mistreated but he never entirely lost again his attitude of reserve. You may be sure he was not punished for wilfulness or for silliness, the child's common cloak for inward fear.

But, like most fond parents, I lose perspective and prolong the story of my infant prodigies. The biologist has proven his point. Learning to feed properly is but the development of an instinct as are the learning to bathe and to preen the feathers. Like learning to sing, to quarrel, to fear, even to fly, they are not learning processes at all. They are but stages of growth. That magnificent series of reflexes involved in flight is not the result of experience. The first time the birds attempted to fly they flew, not far, but well. They could not fly far because they lacked strength. They flew well because of an inborn coordination of sensory and motor nerves, a sort of racial knowledge conveyed by heredity to the fertile egg from which each had sprung. All these tricks and traits developed in orderly fashion as the time for each arrived. In this development Nip was always just ahead of Tuck, but the order of appearance was the same in both. Yes, the biologist had proven his point; but did he leave anything for the poor educator?

The educator can learn much from the story of Nip and Tuck. One lesson is that much of our so-called education is but a superficial patting of the human clay, a holding of child activity to certain orthodox lines pending arrival of the inward urge upon which we may work. Can we truly say that education ever creates the impulse? Rather does it liberate impulse. The twins did learn many things, some of which were temporary expedients to serve through the formative period. We need a few such in education. Finally, is it not the function of education to take the native worth and make it more worthy? Nip's instinct of fear, tempered by education, became a proper reserve toward clumsy humans, however well meaning. Birds' inherited voices respond to later training after their adult structure has been attained, and they may come to execute a variety of songs.

The aim of education, then, is not an uprooting of the natural attribute but is a sort of top working effect for the improvement of that native rootstock. Education should be constructive, not destructive.

Rodin enscribed one of his celebrated marbles with these words: "I feel two natures struggling within me." The phrase well depicts the unstable attitude of mind of this particular foster parent in regard to his experiments on the heavenly twins. Did he fail in one attempt, there is consolation for the biologist in saying "I told you so." Did he succeed in another, there was the

pleasure of the optimistic educator who sees training lay hold upon and glorify the inherent tendency. Altogether, remembering that he claims to be both biologist and educator, he derives much pleasure from the entire experience, which same constitutes a commendable philosophy. Try it, patient reader who may have followed to this point the lengthened but truthful biography of Nip and Tuck.

Los Angeles, California, December 9, 1920.

NOTES ON TWO CHARACTERISTIC BIRDS OF THE SAN GABRIEL WASH

By ROBERT S. WOODS

WITH FOUR PHOTOS

ON THE STONY, brush-covered lands along the San Gabriel River at Azusa, Los Angeles County, California, the bird usually most in evidence is the Cactus Wren (*Heleodytes brunneicapillus couesi*), by reason of its active, noisy ways and the abundance of its bulky, flask-shaped nests in various

Fig. 9. ADULT CACTUS WREN PERCHED ON "LEAF" OF PRICKLY PEAR CACTUS; SAN GABRIEL WASH, NEAR AZUSA, CALIFORNIA; MARCH, 1916.

stages of decay. The majority of the nests, which are constructed of dead weeds and grass and lined with feathers, are placed in the taller clumps of prickly pear, probably on account of the small size of most of the cholla cac-

tus. The birds evidently have full confidence in the inaccessibility of their nesting sites, as the nests are located in the most conspicuous positions and the birds do not hesitate to approach them while under observation. The nests, including those of the previous season, are used as sleeping quarters throughout the year. The birds retire early, and if one walks among the cactus after sunset the end of a tail may be seen in the entrance of each habitable nest.

A feature typical of the adult Cactus Wrens in this locality is the large black throat patch, beginning abruptly below the whitish chin and breaking up on the chest into streaks and spots. The young do not acquire this marking for some months after attaining full growth, the throat and chest being lightly and uniformly speckled with black. The young wrens are even more noisy

Fig. 10. CACTUS WREN AND NEST IN PRICKLY PEAR CACTUS; SAN GABRIEL WASH, NEAR AZUSA, CALIFORNIA; MARCH, 1915.

and curious in their disposition than the adults, climbing over any unusual object, such as a camera, and investigating it thoroughly. The Cactus Wren has three rather strident calls which it uses almost constantly except while on the ground; but in this particular locality it seldom if ever sings at any season of the year. The food, which includes ants, is mainly obtained by searching through dead vegetation on the ground, raising leaves and small stones with the beak and peering under.

While the area of brush-land suited to the habits of the Cactus Wrens is not likely to be reduced rapidly, they take kindly to civilization, frequenting the house roofs, and this year a pair even building a nest on a lookout under the gable of a ranch building. They show a marked fondness for sweet corn when the husk has been opened so as to expose the ear, but have not been observed to molest any other vegetable or fruit.

The Costa Hummingbird (*Calypte costae*) shown herewith, has returned to the same location at Azusa for the last three years at least, arriving the latter part of March and leaving early in June. The presence of the Costa Hummingbird may be recognized by its prolonged shrill whistling note, usually uttered while swooping through the air, but sometimes also while at rest. It has no song such as that of the Anna Hummingbird.

The Costa Hummingbird feeds from both wild and cultivated flowers and from orange blossoms. This occupies little of its time, most of which is spent on certain favorite perches from which a comprehensive view may be obtained.

Fig. 11. ADULT MALE COSTA HUMMINGBIRD; SAN GABRIEL WASH, NEAR AZUSA, CALIFORNIA; APRIL, 1920.

Fig. 12. ANOTHER POSE OF BIRD SHOWN IN FIGURE 11.

It shows no special hostility to birds of other sorts, though occasionally diving at them from high in the air, to which maneuver, however, the other birds generally pay no particular attention. The female usually stays inside the bushes, where it is often seen hovering among the leaves as if seeking food.

Considerable variation is noticed in the color of the gorget of the same individual male, this sometimes appearing bluish violet and at other times magenta. The nest has not been found, as the movements of the birds I watched gave no clue to its location.

Los Angeles, California, September 28, 1920.

THE PRIBILOF SANDPIPER

By G. DALLAS HANNA

WITH ONE PHOTO

THE DATA upon which this study is based have been secured during seven years of acquaintance with the species. Valuable information on nesting habits has been furnished by Messrs. C. E. Crompton and P. C. Partch, formerly of St. George Island.

The Pribilof Sandpiper (*Arquatella ptilocnemis*) is chiefly of interest because of the fact that it has an exceedingly limited breeding range and probably the shortest migration route of any northern shore bird. It is known to breed only upon St. George, St. Paul, St. Matthew and St. Lawrence islands, all located in Bering Sea within an area not over 400 miles in greatest dimension. The winter range of the species is practically unknown, the only records being from Portage Bay, southeast Alaska (Hartlaub, Journ. für Ornith., 1883, p. 280), and Lynn Canal (Ridgway, Birds of N. and Mid. Am., VIII, 1919, p. 246), between Alaska and British Columbia. The appearance of the birds at the former locality in flocks in spring (if identifications were correct) indicates that they wintered farther south, probably on Vancouver and other islands of British Columbia. They could hardly have come from beyond these localities and have remained undiscovered. The species has been reported in fall migration about Unimak Pass, Alaska (McGregor, Condor, VIII, 1906, p. 119), and in spring on the Bristol Bay coast (cf. Palmer, The Avifauna of the Pribilof Islands, in Fur Seals and Fur-Seal Islands of the North Pacific Ocean, III, 1899, p. 403, and Osgood, N. Am. Fauna, no. 24, 1904, p. 62).

If the specimens taken by McGregor (*ibid.*, p. 119) on Unimak Island on August 14 (printed August 4 in Ridgway, Birds of N. and Mid. Am., VIII, 1919, p. 247), and on Tigalda Island, August 5, were correctly identified it is possible that the species breeds there and was not migrating. No indication of migration has been noted so early as that on the Pribilofs, although a few early breeders may have left. In 1920 I made persistent and thorough search for the species about Unalaska, September 7 to 18, and at Woody Island, September 21 to 23, but with only negative results.

There is apparently but one record of the bird breeding on St. Lawrence Island. Nelson (Rep. Nat. Hist. Coll. Alaska, 1877-1881, Wash. 1887, p. 105) found a single pair on the south shore in June, 1881. Elliott (Monog. Pribylov Group, U. S. Dept. Int., 1881, p. 129, footnote) had previously stated distinctly that he did not find it there.

In 1916 I found it on St. Matthew Island (Auk, XXXIV, 1917, p. 409) just as abundantly as Elliott (*ibid.*) had described. It is, if anything, a more common bird there than on the Pribilof Islands; and furthermore it breeds on the lowlands, in many cases just back of the drift wood lines, while farther southward it resorts to the uplands. Fresh eggs and downy young were found on St. Matthew in early July and this would indicate that the nesting season was somewhat later there than on the Pribilofs.

I strongly suspect that the birds have some other extensive breeding ground than St. George, St. Paul and St. Matthew islands, because in September and October large flocks come to the two former islands; these appear to

contain many more individuals than are in existence on all three. Whether St. Lawrence Island supplies the extra number or not remains for future determination.

Spring migration takes place the latter part of April and the first half of May. My earliest record for St. Paul Island is April 15 (1915) when a flock appeared at Northeast Point. The height of migration is a little later than that date and may usually be expected from the first to the fifteenth of May. Birds are almost invariably paired upon arrival. Very few spring flocks have been seen on the Pribilofs, and they do not tarry by the beaches but go directly to the upland nesting sites. It seems to be uncommon for more than the resident population to land upon an island in spring. The birds seem to go directly to the chosen breeding grounds wherever they may be. This fact is of wide application among the northern shore birds. Only rare stragglers of such species as golden plovers, turnstones, and Pectoral and Sharp-tailed sandpipers stop at the Pribilofs on their way north, but large numbers of some of them come in fall.

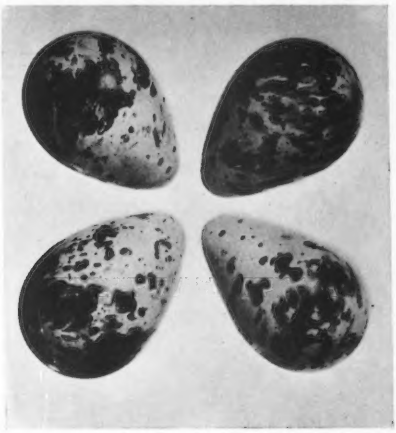

Fig. 13. An average set of eggs of the Pribilof Sandpiper. Slightly less than natural size.

On St. George Island the high upland tundra has been chosen for breeding ground. Here, among the reindeer "mosses" and light gray, lichen covered rocks the sandpipers reign supreme in the fog. Some speculating may be indulged in to find a reason for so unusual a choice of locality. Elevations up to 500 feet are sought. Perhaps they shun the sea coasts on account of the presence there of large numbers of foxes. During all history this has been a greater fox island than either St. Paul or St. Matthew. On the latter island in June and July the birds may be found in large numbers around and back of the drift wood piles. If it were not for this fact being known we might suspect that on St. George the light gray tundra was selected for protective purposes, the birds themselves being distinguished chiefly by their light colors.

St. Paul Island for some unaccountable reason is not chosen as a breeding

ground except by a very few pairs. In 1919 not over a dozen were found during the entire nesting season, when almost all of the available areas were seen. The country about Northwest Point is the chief site, but birds have been found near the coast on low land by Polovina seal rookery and on Telegraph Hill. There are large tracts of apparently suitable tundra which are left unoccupied. I know of but one set of eggs having been taken on that island (and it was by a native), so the scarcity cannot be attributed to the industry of egg hunters. Birds are even more abundant on St. Paul in fall than on St. George and but few of them are shot for food at either place.

If a person climbs to the sandpiper country on St. George during May or June, one of his first surprises will be a series of notes very much like those of the flicker, a full deep whistle repeated in the same pitch about a dozen times in quick succession. The bird utters this while on the wing, most likely when it is coming toward the intruder with great speed. When close by it wheels and settles lightly on a nearby hummock or "niggerhead". One wing will be held vertically extended for a few seconds after alighting and may be flashed at short intervals thereafter. Another note for which I have no descriptive language always reminded me of the sound of tree frogs. It is the note usually given when the birds are on the ground. While neither can be called a song, they are very attractive and pleasant to the listener and most surprising to one familiar only with the "peep peep" of sandpipers in winter.

The elevating of one wing is an action for which no logical reason can be given. It is indulged in by both male and female and at times when it cannot be considered a signal. Nor can it be taken as a warning to intruders because it is often seen when one's presence is to them unknown. It is not seen after the breeding season is over and is no more explicable than the comparable "fiddling" of our familiar crabs. Palmer (*ibid.*, p. 401) noticed that the near wing was elevated first and might be followed by the other, but this does not seem to be the rule except when the bird is manifestly endeavoring to attract attention. For instance when one is lying concealed and the birds are following their own inclinations either wing may be elevated first.

On the breeding grounds of St. George and St. Matthew the birds are very common, and from one to a dozen are in almost constant attendance upon the visitor. They sight him from afar and fly to meet him. Some bird will almost always try to lead him astray. If followed, it flies from knoll to knoll, often not more than twenty yards away. It remains in front of the visitor regardless of the direction he may take; whether toward or from the nest, makes no difference. After several minutes of this a sudden flight, with the familiar "song", is taken to some distant hill and the searcher for a nest is left confused and confounded.

A search for the nest will exhaust the patience of any except the most persistent collector. Messrs. Crompton and Partch have been more successful than any one else in locating them and all of us agree that when a bird flies to meet the visitor, as just described, it is a pure waste of time to watch or follow it. Every method known to us of locating nests by watching the actions of the parents has failed. We have located nests and then endeavored to establish rules for guidance with others, but no definite facts could be determined. It was finally agreed that it was useless to watch a bird under any circumstances more than fifteen minutes. If the location of the nest is not disclosed in that time it is safe to assume that the mate is on it and it might be

hours before the guard would go there. In the meantime it may fly half a mile away and forget to come back, even to tease the hopeful collector lying concealed in the mist and fog behind some cheerless rock. No definite range can be ascribed to any one pair of birds because those off the nests mingle indiscriminately. Very often a bird will fly completely out of the range of vision in the fog.

The best plan to follow in the search for nests seemed to be to just walk and hunt, and several factors combine to make the task difficult and discouraging. In the first place the incessant fog and mist settle on the lenses of those obliged to wear spectacles and vision is clouded very quickly; the same thing prevents the use of field glasses to any but a very limited extent. The nesting sites are from two to eight miles from the habitations and the intervening country is very rough and difficult to traverse. Moreover, "hiking" is not always enjoyed when one must be encumbered with hip boots, oil-skin and sou'wester, the only means of keeping dry.

Sometimes a bird will leave the nest when one is ten or even fifteen feet away, but usually it must be almost stepped on before it will fly. Being the same color as the tundra it is almost invisible until it moves. Partch located a nest with three eggs in 1920 and carefully marked it by placing two piles of moss in range with the nest. Upon returning later we were unable to locate it although we knew within ten feet the exact position. We decided to give it up, but later in the day when we were passing close by we decided to take another look. This time the bird was flushed when we were several feet away and there we saw our tracks from the earlier search not twelve inches from the nest.

The action of a bird leaving a nest is unmistakable and can always be recognized, once it is learned. It is a quick, excited, jerky flight, very close to the ground, and the bird goes but a very few yards until it feigns injury in its endeavor to entice the intruder away. It will always flutter in front of a person, even though he walk directly toward the nest.

When the bird is seen to fly the eggs are even more inconspicuous and difficult to find unless the exact spot from which it flew be located. Crompton thus flushed a bird which he knew had a nest, but he was at a loss to find it. At last he left his cane as nearly as possible where the nest should have been and repaired to a nearby rock to watch and wait. In a few minutes the bird returned to the eggs, which were located about a yard from the stick. When a bird is flushed from a nest it seldom happens that the other parent is near.

The nest is a mere depression about three and a half inches wide by two and a half inches deep. Most of the material is removed, but it is evidently packed down to a certain extent. No foreign material is carried at all. The nest is usually, but not necessarily, on some very slightly elevated ground and among the lichens called "reindeer moss". Some nests have been found where there was an admixture of *Hypnum* moss and again where the dwarf willows creep, root-like, beneath the surface.

The normal set of eggs consists of four. A greater number has never been found and a less number only when it was uncertain if the full set had been laid. As much as three days may intervene between egg laying, but usually the four are deposited on successive days. When one set of eggs is taken another will be laid. But the same nest is not used the second time, the conten-

tions of some natives to the contrary notwithstanding. A set of eggs found as late as July 24, 1917, certainly indicated that two may be laid in the same season on rare occasions. One set is the rule.

The color of the eggs is, as would be expected, somewhat variable. The lightest set examined in connection with this report has the ground color greenish glaucous (Ridgway, Color Standards and Color Nomenclature, 1912). From this there is perfect gradation through court gray and light olive gray to deep olive buff in the darkest set. Variation in any particular set is very slight. Spots are large and bold as a rule. They vary in size from 15 millimeters to less than one and they are usually massed about the larger end. In one case the eggs are uniformly spotted with small spots all over. In none is the spotting heaviest on the smaller end (reversed eggs). Spots are usually inclined to be round but occasionally they are in the form of streaks arranged roughly in spiral form. Only rarely are they banded about the larger end. In two cases a narrow black line was produced spirally on the larger end. The coloration of the spots varies from snuff brown to sepia and from cinnamon brown to mummy brown. In some cases they are raw umber. The darkest shades occur where the spots overlap and some deep-seated ones are pale aniline lilac or pale to deep quaker drab. Only rarely is the outline of a spot not sharp.

The description by Coues (in Rep. upon the Condition of Affairs in Alaska, by Henry W. Elliott, 1875, p. 186) of the first set of eggs collected has been copied many times and represents an average nest. The measurements of the four eggs as given by Palmer (*ibid.*, p. 404) are: (converted to millimeters) 39.2x27.3, 38.5x26.6, 37.9x27.3, 37.4x26.6.

The following table gives the measurements of 18 fine sets. They have been taken very carefully with vernier calipers and show more variation than would perhaps be suspected.

MEASUREMENTS OF EGGS OF PRIBILOF SANDPIPER

ALL TAKEN BY G. DALLAS HANNA

Orig. No.	Length	Breadth	Orig. No.	Length	Breadth
1028	39.9	28.4	1849	39.6	27.9
	42.0	28.3		40.4	27.5
	41.2	27.8		40.5	27.7
	41.0	28.2		39.2	28.0
1208	40.9	27.5	1850	41.5	28.6
	39.5	27.0		41.3	26.8
	41.7	27.5		38.4	28.1
	39.0	27.4		40.1	28.4
.....	37.9	28.5	1851	38.9	26.9
	39.7	28.2		38.8	27.1
	40.0	28.6		37.4	27.0
	39.1	27.9		38.8	27.0
1843	38.9	26.8	1852	39.1	26.4
	41.8	26.4		40.6	27.3
	37.9	27.3		40.8	27.0
	40.3	26.9		38.5	28.4
1844	39.0	27.8	1853	38.2	27.4
	39.8	27.3		39.5	27.1
	39.9	26.5		39.2	27.5
	40.1	27.0		38.8	27.3

1845	39.3	27.1	1854	40.6	27.9
	40.3	27.5		40.8	27.7
	41.4	27.4		39.6	27.4
	40.0	26.9		40.8	27.5
1846	39.9	27.0	1855	38.6	27.0
	38.7	26.8		37.6	27.3
	39.0	27.9		35.0	27.4
	40.1	27.8		39.1	27.3
1847	39.0	27.5	1885	39.8	26.8
	38.6	27.3		37.7	26.8
	38.3	27.6		37.5	26.9
	36.5	27.0		38.7	27.5
1848	37.6	29.0	2104	41.2	27.0
	37.7	28.6		40.9	26.9
	38.5	28.6		42.0	26.8
	38.1	28.4		40.0	26.4

The average dimensions derived from the above series of 72 eggs are: Length, 39.473 and breadth, 27.468. Those which showed the extreme measurements were 42.0 by 27.8; 35.0 by 27.4; 37.6 by 29.0; and 39.1 by 26.4.

Through the courtesy of Mr. Chase Littlejohn I am permitted to make comparisons of the eggs of the Pribilof Sandpiper with a set of four eggs of the Aleutian Sandpiper he collected on Sanak Island, Alaska, in 1882. One egg of this set is precisely like the average set of Pribilof eggs illustrated in fig. 13. Coloration, method of spotting, size, and shape are the same. The other three eggs are quite different. They lack the olive or greenish tinge to the background and the spots are not massed about the larger end. They tend, however, to form an irregular zone about the greater diameter. There is also a greater profusion of small spots mixed with the larger than in Pribilof eggs. Mr. Littlejohn states that the considerable series of eggs collected by him conformed to the coloration and pattern of these three, and that the single dark egg of this set is the only one he ever saw. The average measurements of the four eggs are 39.0 by 27.2 and of the three which are considered typical of the species, 38.7 by 27.0.

The measurements of the eggs of the Aleutian Sandpiper have been given by Oates (Cat. Birds' Eggs Brit. Mus., II, 1902, p. 57) as varying from 38.2 to 35.4 in length and from 25.3 to 24.0 in breadth (measurements converted to millimeters). The figure which he gives (*ibid.*, pl. II, fig. 10) does not conform to his description of coloration, and the spots contain considerably more reddish than those of the eggs collected by Mr. Littlejohn. This figure referred to measures 39.4 by 25.0. These are proportions differing considerably from actual measurements of eggs. The tipping of an egg in photographing it might cause more or less shortening in the resulting print but could not account for all the discrepancies in the figure in the British Museum Catalogue. Some doubt is therefore cast upon the authenticity of what appears to be the only illustration of the egg of the Aleutian Sandpiper.

The eggs of the Purple Sandpiper, according to Oates (*ibid.*, p. 56), vary in length from 39.2 to 34.2, and in breadth from 27.8 to 25.8 (measurements converted to millimeters). Thus the eggs of the Pribilof Sandpiper appear to be larger than of either of the other species of the genus, a fact which would be expected from the size of the bird.

It will be interesting to enumerate the sets of eggs of the Pribilof Sand-

piper known to be in existence at this date, because they remain sufficiently rare to attract attention among collectors. In making up the following list it is realized that omissions have probably occurred, but all of the information I possess on the subject is recorded.

U. S. National Museum	2 sets	One from Elliott, one from True and Prentiss. (See Palmer, Avif. Prib. Is., etc., p. 404.)
Calif. Academy Sciences	14 sets	From G. Dallas Hanna
Harold Heath	2 sets	
J. Hooper Bowles	1 set	From Dr. Heath
A. C. Bent	1 set	From H. P. Adams
H. P. Adams	1 set	
G. Dallas Hanna	2 sets	Held temporarily
Total	23 sets	

The young birds leave the nest very soon after they have hatched, and their coloration matches that of the tundra so exactly that they are almost invisible. It is only when they are frightened suddenly that they move and thereby can be seen. They then run away with a plaintive "cheep, cheep," the mother bird at the same time frantically feigning injury to attract the visitor to herself. She is much more solicitous of a young bird than of her eggs. The male at such times may usually be seen perched on a "niggerhead" not far away spreading one wing to the breeze.

So far as known, the food of both old and young consists of beetles and flies while the birds remain on the highlands; when they move to the ponds and sea shores they eat copepods, amphipods, etc. The United States Biological Survey has been supplied with a large series of stomachs from which it is hoped a report as to the exact nature of the food may soon be forthcoming.

The action of Ridgway (Birds of N. and Mid. Amer., VIII, 1919, p. 244) in considering the Pribilof Sandpiper a distinct species as originally designated, and not a subspecies of the Purple Sandpiper as was done by the A. O. U. Committee, seems entirely justifiable so far as field observations are concerned. No difficulty has been experienced in differentiating it from the Aleutian bird (the nearest counterpart of the Purple Sandpiper on the west coast) when the two are found together in the same flock. The dark colors, small size, and apparently much more rapid flight of the Aleutian would seem to indicate that it even should be considered specifically distinct and not a subspecies of the Pribilof bird.

As soon as the young birds are well able to fly they resort to the tide pools and small ponds near the sea. Later the older birds join them and the flocks increase in size to several hundred in favorable places. This takes place in August and September in such localities as the Salt Lagoon of St. Paul Island. The moult of the breeding plumage takes place slowly, and winter dress is not completely assumed until the birds are about ready to leave for the south on the fall migration. This takes place slowly and gradually during the latter part of September and October.

The birds possess some economic importance to the natives of the Pribilofs and they have occasionally been eaten in the officers messes. Their habit of congregating in fairly compact flocks and their fearless unassuming nature make them easy targets. For this reason close watch should be kept of the numbers returning annually and should any noticeable diminution take place

strict protective measures can and should be invoked. This is possible because the islands are under strict governmental control as regards all wild life. Because of its limited range it would not be a difficult matter to completely exterminate the species. Special protective measures at this time, however, are not believed to be essential because there is even less hunting now than there has been for fifty or more years. The introduction of live stock and reindeer for fresh food removes in large measure the necessity for shooting and the native is ordinarily too indolent to hunt unless he has to do so for food.

It should be added that the Pribilof Sandpiper has an esthetic appetite, which should appeal to most people. Unlike the other common shore birds, the turnstones, phalaropes, pectorals, sharp-tails, and even that much flaunted prize, the golden plover, they do not visit the carrion fields of rotting seal carcasses for fly larvae. These other birds feed there in large numbers and assume a rank fishy taste from the seals.

San Francisco, California, December 24, 1920.

NOTES FROM SOUTHERN ARIZONA

By H. H. KIMBALL

ALTHOUGH the season of 1918 was the second of two exceptionally dry years in southern Arizona, bird life was fairly abundant in suitable localities and a number of interesting birds were taken by the writer during that year and subsequently. Four localities are involved.[1]

VICINITY OF TUCSON

Glaucidium phaloenoides. Ferruginous Pigmy Owl. In the foothills of the southern slope of the Catalina Mountains, a single specimen was taken on May 9, 1918, a female which would have laid its first egg in a few days. The bird was in a mesquite tree, where it was taking advantage of the first warming rays of the morning sun, after the manner of pigmy owls. Evidently quite rare in that vicinity.

Peucaea cassini. Cassin Sparrow. Probably uncommon near Tucson since only one was seen. (H. C. O.)

Petrochelidon lunifrons melanogaster. Mexican Cliff Swallow. A single specimen, the only one seen, was taken April 10, 1918, from a mixed flock of Cliff, Rough-winged, and Violet-green swallows, the latter predominating.

Petrochelidon lunifrons hypopolia. Gray-breasted Cliff Swallow. Two specimens, April 15 and 18 (H. C. O.), 1918.

Riparia riparia. Bank Swallow. The only one observed was taken from a mixed flock of swallows April 15, 1918. (H. C. O.)

Hylocichla guttata sequoiensis. Sierra Hermit Thrush. Two specimens were taken near the Santa Cruz River, ten miles south of Tucson, March 18 and April 18, 1918. (H. C. O.)

CHIRICAHUA MOUNTAINS

Sayornis phoebe. Phoebe. A strange, clear, pleasing note heard October 6, 1918, was ascribed to a *Sayornis*, but the bird was not taken until October 8, when it was discovered on a fence post a short distance below Paradise, on the east slope (H. C. O.). Another was secured near the same place August 16, 1919.

[1]Acknowledgment is due to Dr. H. C. Oberholser for identifying such of the specimens recorded in this article, as are indicated by "(H. C. O.)", and to Mr. J. Eugene Law for rewriting this article from notes furnished.

Spizella atrogularis. Black-chinned Sparrow. A male with enlarged testes was taken near Paradise, June 23, 1919. Females and males without the black chin were taken from September, 1918, to February, 1919. (H. C. O.)

Junco mearnsi mearnsi. Pink-sided Junco. A few were noted in company with other species of junco near Paradise. One was secured February 13, 1919. (H. C. O.)

Progne subis subis. Purple Martin. A colony of martins was found nesting or about to nest in a large dead pine tree in Barfoot Park, high on the west slope. Another colony was found nesting near Rustler Park on the east slope. Thinking that these birds might be the same as those found nesting by the writer in the pines of the Sierra Madre Mountains of Chihuahua, two females were secured and have been pronounced *P. s. subis* (H. C. O.). These birds do not nest in any other mountain range in southeastern Arizona.

Bombycilla cedrorum. Cedar Waxwing. A female taken September 27, 1918, near Paradise showed evidence of late nesting, for the whole abdominal region was bare of feathers. Juvenals in the streaked plumage were taken on the same day. Birds were also observed in 1919. Of regular occurrence in the fall and winter months in the mountains of southeastern Arizona.

Setophaga ruticilla. American Redstart. A male in excellent adult plumage was taken at about 5500 feet altitude in Cave Creek Canyon, September 11, 1918.

Sitta canadensis. Red-breasted Nuthatch. One specimen was taken from a sycamore at about 5400 feet, October 1, 1919.

VICINITY OF WILLCOX

Otocoris alpestris leucansiptila. Yuma Horned Lark. Two specimens were taken March 8, 1919. (H. C. O.)

Otocoris alpestris enthymia. Saskatchewan Horned Lark. Specimens taken in winter. (H. C. O.)

Otocoris alpestris aphrasta. Chihuahua Horned Lark. The common winter bird. (H. C. O.)

VICINITY OF YUMA

Myiarchus cinerascens cinerascens. Ash-throated Flycatcher. Resident in small numbers during the winter.

Molothrus ater obscurus. Dwarf Cowbird. Occurs in large flocks in Yuma during January and February. A flock observed February 19, 1920, must have contained four hundred birds. Another flock on February 10 included some Brewer Blackbirds and a single Red-wing, the only one of the latter observed. The fields of Kafir corn furnish the favorite food of these birds. English Sparrows, Ground Doves, Abert Towhees, and Horned Larks also eat this corn.

Vermivora celata sordida. Dusky Warbler. Evidently a winter visitant to the Colorado Valley. One was taken near Yuma, December 20, 1918, and two others observed later.

Yuma, Arizona, February 20, 1920.

THE SITKAN RACE OF THE DUSKY GROUSE

By H. S. SWARTH

(Contribution from the Museum of Vertebrate Zoology of the University of California)

THE DUSKY GROUSE of southeastern Alaska has heretofore passed under the name of *Dendragapus obscurus fuliginosus*(Ridgway), but examination of adequate material shows it to be sufficiently different from that subspecies to merit a separate appellation. The distinctive characters of the race have been noted before. Grinnell (Univ. Calif. Publ. Zool., vol. 5, 1909, p. 204) remarks upon the "rich hazel" coloration of the female Alaskan grouse as "the extreme manifestation of *fuliginosus* characters". The present writer, comparing a series of grouse from Vancouver Island with others from Alaska, comments upon certain "conspicuous differences of coloration" (Swarth, Univ. Calif. Publ. Zool., vol. 10, 1912, p. 21). Recent study of additional material from the northwest confirms the existence of these differences, emphasizing the desirability of affixing a name to the race from southeastern Alaska.

There is no material available from the type locality of *Dendragapus obscurus fuliginosus*, "Cascade Mountains, at foot of Mt. Hood, Oregon" (A. O. U. Check-List, 1910, p. 138), but birds from Vancouver Island have been assumed to be representative of that subspecies. There are in this Museum seventeen skins of *Dendragapus obscurus fuliginosus* from Vancouver Island. There are also seven skins from the mountains of northwestern California that are to be referred to *fuliginosus*. Of the Alaskan subspecies there are twenty-eight specimens available.

Dendragapus obscurus sitkensis, new subspecies

Sitka Grouse

Type.—Female adult; no. 9788, Mus. Vert. Zool.; Kupreanof Island, 25 miles south of Kake Village, at southern end of Keku Straits, southeastern Alaska; April 29, 1909; collected by H. S. Swarth; original no. 7267.

Diagnosis.—Most nearly like *Dendragapus obscurus fuliginosus*. Adult male not appreciably different from the male of *D. o. fuliginosus*. Adult female and immature of both sexes, as compared with those of *fuliginosus*, much more reddish in general coloration. This color feature affects practically all the plumage except some limited areas, as the slaty-colored abdominal tract, the chin and throat, and the unmarked and generally concealed portions of the remiges and rectrices. The predominant color dorsally is close to pecan brown (Ridgway, *Color Standards and Color Nomenclature*, 1912, pl. 28). Individual feathers are barred with black and brown, and are brown tipped. On head and neck brown predominates, the narrow black bands being almost entirely hidden. Upper tail coverts and central rectrices are conspicuously of this reddish brown color. Breast and sides are mostly pecan brown and black. There are conspicuous white spots on sides of breast and flanks. Tarsus brown.

Female *fuliginosus*, in comparison, is colored as follows: The upper parts are a duller brown with a great deal of black showing through and with the brown everywhere sprinkled with black or gray. There are no pure reddish brown areas as in *sitkensis*. The neck above is predominantly grayish; upper tail coverts and remiges are mostly grayish. Breast and sides are mostly gray and black, with very little reddish. Feathers on sides of breast are dull brownish, mottled with black and tipped with white. Flanks are mostly grayish. Tarsus gray.

Distribution.—This grouse inhabits parts of the Sitkan district of southeastern Alaska. Specimens are at hand from the following islands of the Alexander Archipelago: Admiralty, Baranof, Chichagof, Kupreanof, Etolin, Mitkof, and Wrangell. (For details of distribution see Swarth, Univ. Calif. Publ. Zool., vol. 7, 1911, pp. 56, 155, map, fig. 2.)

Remarks.—Female grouse from island localities in southeastern Alaska are uniformly of the reddish coloration described. There are two specimens at hand, an adult male and an adult female, from Glacier Bay, the only mainland point represented. These apparently are to be referred to *sitkensis*, but the female is appreciably less red than any of the island birds.

A form of dusky grouse is known to occur on the Queen Charlotte Islands, which lie midway between Vancouver Island and the Alexander Archipelago (Osgood, N. Am. Fauna, 21, 1901, p. 42), but whether *fuliginosus* or *sitkensis* I do not know. I have seen no specimens from those islands.

Berkeley, California, December 17, 1920.

FURTHER NOTES ON BIRDS OBSERVED NEAR WILLIAMS, ARIZONA

By ALEXANDER WETMORE

IN LATE WINTER and early spring of 1907 the writer made a collection of birds at Williams in northern Arizona, and later published observations on this work in which were given notes on 40 species (Kansas University Sci. Bull., vol. IV, no. 19, Sept., 1908, pp. 377-388). During the summer of 1918, I was in Williams again from July 6 to July 17, and, though engaged in writing certain reports, had opportunity during morning and evening of the long summer days to make observations on the bird life and to do some collecting. The list of birds observed as given herewith is far from exhaustive but supplements the notes published previously as it enumerates many of the breeding birds to be found in the vicinity. Advantage has been taken of the present opportunity to review the collection of skins made in this region in 1907 and to make certain changes in subspecific identifications in accordance with present day views in this ever shifting subject. In certain cases, however, it has been deemed inadvisable to take up the matter of subspecific forms.

The town of Williams is placed at the base of Bill Williams Mountain. A series of broken hills covered with yellow pine, scrub oaks, and mountain mahogany lie south and west of the village at the base of the mountain, while on the north is a level area forming part of the Coconino Plains. Zonal conditions about the town may be described as Transition, with Canadian zone on the mountain above. The boreal elements of the latter are found in north gulches at a comparatively low altitude. The upper Sonoran zone spreads over the flats to the north and is found to the west in descending the mountain below Supai. As may be imagined there had been considerable change in local conditions during the years that had elapsed since my last work here. The surrounding country had been divided into small ranches, with considerable areas under cultivation and more of the pine timber had been cut away. Some of the more notable changes brought about in the bird life are noted in the list that follows.

A number of birds seen during late winter and early spring in 1907 were not found in summer in 1918. These are enumerated here to complete the list given below. Following are the additional species:

Buteo b. calurus, Sphyrapicus v. nuchalis, Sphyrapicus thyroideus, Asyndesmus lewisi, Otocoris a. leucolaema, Aphelocoma woodhousei, Cyanocephalus

cyanocephalus, Sturnella m. hoopesi, Carpodacus cassini, Spinus p. pinus, Pooecetes g. confinis, Junco h. hyemalis, Junco h. mearnsi, Junco caniceps, Junco o. shufeldti, Lanius l. excubitorides, Oreoscoptes montanus, Certhia f. montana, Baeolophus i. griseus, Psaltriparus plumbeus, and *Regulus c. calendula.* These make a total of 65 species of birds observed by the writer in this locality.

1. **Zenaidura macroura marginella** (Woodhouse). Western Mourning Dove. Fairly common. One seen July 7 and several noted on July 9 and 11.

2. **Falco sparverius phalaena** (Lesson). Western Sparrow Hawk. Fairly common. Seen daily from July 7 to 14.

3. **Dryobates villosus leucothorectis** Oberholser. White-breasted Woodpecker. Common on the slopes of Bill Williams Mountain. A brood of young out of the nest but still under the care of their parents seen on July 8. Three specimens secured here in 1907 have the following wing measurements: Male (March 19) 124 mm., female (March 2) 126 mm., female (March 8) 122 mm. In the male two or three of the outer median wing coverts have narrow streaks of white along the shaft. In the first female mentioned above all of the outer median coverts are conspicuously marked with white and there is a white spot on one of the lesser coverts. The third specimen has the white limited to a very narrow linear spot not more than two millimeters long on one median covert in either wing.

4. **Balanosphyra formicivora aculeata** (Mearns). Mearns Woodpecker. This species was common among the oaks on the level flat west of town and also in similar growth south of Williams around the eastern base of Bill Williams Mountain. Young fully grown were seen on my arrival. I found this woodpecker shy and secretive at times so that it frequently hid behind limbs and remained motionless for long periods in order to escape observation. One evening at dusk several were greatly excited when I was "squeaking" in an endeavor to call up an owl.

5. **Colaptes cafer collaris** Vigors. Red-shafted Flicker. This Flicker was common among the yellow pines throughout the region. On July 9 I noted that young birds were apparently fully grown.

6. **Chordeiles virginianus henryi** (Cassin). Western Nighthawk. The Nighthawk was common about Williams and numbers were seen coursing low over the ground along side streets at dusk. On July 11 one was heard booming in the canyon south of town.

7. **Selasphorus rufus** (Gmelin). Rufous Hummingbird. This species appeared in numbers on July 13 and had evidently just arrived in migration as none had been observed previously. The birds were feeding at a large gentian, probing one or two flowers at a time and then pausing to rest for a minute of two on a twig. They continued to feed until it was so dark that I had some difficulty in finding my way down over the rocks out of the narrow gully in which I had been watching them. In flying their wings made a subdued humming and the birds called *chewp chewp* in a low tone. All that were seen on this occasion were males, but on the next evening, July 14, I observed several females. Specimens were taken.

8. **Selasphorus platycercus** (Swainson). Broad-tailed Hummingbird. This hummer was fairly common about the base of Bill Williams Mountain and was observed daily. An adult male was shot on July 7 and others were observed until July 14.

9. **Tyrannus vociferans** Swainson. Cassin Kingbird. A few of these Kingbirds were found about scattered yellow pines in the areas south and west of Williams. Two pairs frequented tall pines standing in the streets of the town where their loud notes were heard morning and evening.

10. **Nuttallornis borealis** (Swainson). Olive-sided Flycatcher. The Olive-sided Flycatcher was common in the small gulches on the north and east slopes of Bill Williams Mountain. While no nests were observed, the birds were evidently paired and specimens taken on July 14 were in breeding condition. A female was secured on this date that had deposited eggs. The birds were observed daily from July 7 to 14. Usually they were found perched in the tops of the tallest dead pines, but on occasion they alighted among the limbs of living Douglas fir. In feeding they were very active and then often descended for short periods to lower perches. I found that each bird had favorite posts for observation and shifted about from one to another. Their call notes were heard at intervals during the day and at evening came continually from the mountain sides, one of the few bird voices that was heard in the dusk of the canyons as the

sun was descending behind the shoulder of the mountain. The most common note was a loud *pip pip* that in pitch, cadence, and insistence reminded one of the call of some young bird, while another more musical call sometimes given while flying was *pray teer* varied occasionally to *whit pray teer.*

11. **Myiochanes richardsoni richardsoni** (Swainson). Western Wood Pewee. Common.

12. **Empidonax difficilis difficilis** Baird. Western Flycatcher. One was seen July 7 in the gulch south of town at an altitude of about 7500 feet.

13. **Cyanocitta stelleri diademata** (Bonaparte). Long-crested Jay. This species was common in areas where there were coniferous growths. By July 9 I noted that the young were fully grown.

14. **Sturnella neglecta** Audubon. Western Meadowlark. The Western Meadowlark was fairly common in the open country north of Williams. This species was not noted here in 1907 and so may have come in with increased cultivation of the land as has happened elsewhere in the west. Search was made for *Sturnella magna hoopesi*, the only meadowlark present here in 1907, but none could be found. This brings up an interesting question as to the possibility of this form having been replaced by the Western Meadowlark through a change in ecological conditions. In this connection I may add that specimens collected here in 1907 leave no doubt as to the former presence of the Texas Meadowlark.

15. **Passer domesticus** (Linnaeus). English Sparrow. Since its arrival in 1907 (as noted in my previous account, p. 383) this species has increased until it is fairly common about the streets of Williams.

16. **Carpodacus mexicanus frontalis** (Say). House Finch. Individuals were seen about the Camp Clover Ranger Station, west of Williams, on July 13, and near a ranch south of Williams on July 14.

17. **Loxia curvirostra stricklandi** Ridgway. Mexican Crossbill. Crossbills were observed at about 8000 feet on Bill Williams Mountain on July 7, and one was seen among the broken hills south of town on July 11.

18. **Astragalinus psaltria hesperophilus** Oberholser. Green-backed Goldfinch. Fairly common in open localities near Williams and breeding in the shade trees in town. On July 9 two pairs were feeding on the seeds of a composite (*Hymenopappus scaposus*) on a rocky hillside near the dam above town. The birds flew to perches on stones, climbed onto the plant stems, which were from six to ten inches tall, and then sidled out quickly along them as they slowly bent toward the ground. When the seed head was reached it was torn open without hesitation and the birds began at once to eat.

19. **Chondestes grammacus strigatus** Swainson. Western Lark Sparrow. These sparrows were fairly common in open country west and south of town. Recorded on July 10, 13 and 14.

20. **Spizella passerina arizonae** Coues. Western Chipping Sparrow. Common.

21. **Junco phaeonotus dorsalis** Henry. Red-backed Junco. This Junco bred in small numbers on the slopes of Bill Williams Mountain and in the broken region at its eastern base. A breeding female was collected July 7. On July 11 a pair were much excited by "squeaking".

22. **Pipilo maculatus montanus** Swarth. Spurred Towhee. This species was fairly common among the broken hills covered with scrub oaks. A breeding female was taken on July 11.

23. **Zamelodia melanocephala** (Swainson). Black-headed Grosbeak. This Grosbeak was common on the lower slopes of Bill Williams Mountain. Males were still singing and were heard calling and scolding at intervals. On July 7, at an altitude of about 7800 feet I found a nest resting on a horizontal limb against the trunk of a slender oak, about five feet from the ground. The male was on the nest brooding four young from four to six days old. These young had down of a dull white color on the head and back. The open mouth was outlined in bright yellow. The nest was composed of grass and weed stems and was rather flat though the cup was deep enough to contain the young readily.

24. **Piranga ludoviciana** (Wilson). Western Tanager. The Western Tanager was common on the slopes of Bill Williams Mountain and about its base and was breeding. Males were heard singing from the tops of the yellow pines and though not wild

usually slipped away when I tried to get directly under them. An immature bird in juvenal plumage recently from the nest was taken on July 14.

25. **Piranga hepatica oreophasma** Oberholser. Hepatic Tanager. This fine tanager was fairly common among the low yellow pines remaining among the broken hills south of Williams around the eastern base of Bill Williams Mountain. The birds were breeding here, as was shown by the condition of females taken, and were found usually in pairs. In feeding they worked methodically, flying from tree to tree, the male showing a flash of red in passing. Usually they alighted among the lower limbs and then worked out on the tips of the branches, fluttering up from limb to limb toward the top. Once a male dropped to the ground after an escaping insect. On one occasion I saw a male feeding a female and shot her under the impression that she was a young bird. The male of this pair was still in immature plumage but was molting and had developed a few red feathers. The call note of this species was a soft *chewp chewp* that curiously enough was very similar to the call of the Porto Rican Tanager (*Nesospingus speculiferus*).

26. **Progne subis subis** (Linnaeus). Purple Martin. A pair of these martins was observed about Williams on July 6 and 7, and on July 9 two pairs were circling over the canyon south of town.

27. **Tachycineta thalassina lepida** (Mearns). Northern Violet-green Swallow. This species was fairly common and several pairs nested in the canyon south of town. They were seen in the evening hawking for insects or resting on telephone wires.

28. **Vireosylva gilva swainsoni** (Baird). Western Warbling Vireo. These birds were seen among quaking aspens on July 8 and 14.

29. **Lanivireo solitarius plumbeus** (Coues). Plumbeous Vireo. Plumbeous Vireos were fairly common among oaks and aspens near Williams.

30. **Vermivora virginiae** (Baird). Virginia Warbler. This species was fairly common in occurrence. On July 7 a female was flushed from a nest among scrub oaks on the lower slopes of Bill Williams, but the nest could not be found. A male was heard singing on July 9. On July 14 I found a brood of fully grown young still in company with their parents. They were very active in working through the limbs of oaks and pines, and constantly twitched the tail up and down, a very characteristic motion. All were silent.

31. **Dendroica aestiva** (Gmelin). Yellow Warbler. A male was seen in the canyon south of Williams on July 8 and another on July 14. Neither of these birds was secured. It was believed that they were migrants.

32. **Dendroica auduboni auduboni** (J. K. Townsend). Audubon Warbler. Common. Males were in song as late as July 14.

33. **Dendroica graciae** Baird. Grace Warbler. These birds were found in small numbers among the yellow pines and oaks in the canyon south of Williams. At this season males were not singing, so that it was difficult to locate them, as the birds, though quick and active, are very small. On July 8 several were seen and breeding males were collected in an area of yellow pine forest with an undergrowth of scrub oak. Several came down and scolded at me sharply.

34. **Dendroica nigrescens** (J. K. Townsend). Black-throated Gray Warbler. A male was singing among oaks on the slopes of Bill Williams Mountain at an altitude of 7300 feet on July 7.

35. **Salpinctes obsoletus obsoletus** Say. Rock Wren. Common. Broods of grown young were seen on July 6 and July 11. These immature birds had a number of odd, bizarre call notes that several times deceived me into following them in hope of discovering some other species. They were tame and came fearlessly within a few feet of me, peering about under the rocks, examining the smallest cracks and squeezing in and around small crevices.

36. **Catherpes mexicanus conspersus** Ridgway. Canyon Wren. Fairly common around Bill Williams Mountain. On July 8 a female was found feeding young in the canyon south of town. The young, three in number, though not fully fledged, had left the nest and reposed at the bottom of a cleft in the rock in a space two inches wide. Here they dozed in semi-darkness while awaiting the coming of food. The labor of caring for them seemed to be left entirely to the female, though the male was in the vicinity. The female came and went fearlessly carrying food, in the form of brown crickets with elongated antennae, paying little attention to me as I peered in the crevice with my face

barely two feet away. After feeding she carried away excrement exactly as though the young were in the nest. The young were able to climb up and down the steepest rock surfaces with no difficulty whatever. When placed in the open, they became more alert and after a minute or so clambered away toward shelter. The heat of the sun, though apparently mild, affected them severely so that they panted heavily and closed their eyes seeming almost overpowered; it is probable that never before had they felt its rays. The call note for food was a faint *tsee tsee.*

Two specimens secured at Williams in 1907 were identified in my previous paper as *Catherpes m. polioptilus,* after comparison with the very inadequate series of other Canyon Wrens at hand in my collection and in that of the Museum of the University of Kansas. Further study of these two birds, however, seem to indicate that they are intermediate between *C. m. conspersus* and *C. m. polioptilus* (the latter apparently being in itself a somewhat indefinite, poorly characterized series of intermediate groups). The birds in question are a female taken March 4, and a male March 21, 1907, both secured in the canyon south of Williams. The male is slightly darker above than the female, in this verging slightly toward *polioptilus.* It is large enough also to be included in the lower range of measurements of that form. The female, paler in color, agrees with *conspersus,* and is too small to come within the range of measurements of *polioptilus.* Viewed from above both specimens have the head almost imperceptibly darker than in *conspersus.* On the other hand the back is distinctly paler than in *polioptilus.* After careful consideration it has seemed that the two are slightly nearer *conspersus* and they are placed with that form.

37. **Troglodytes aedon parkmani** Audubon. Western House Wren. Fairly common. Nearly fledged young were found in a hole in an oak stub on July 11.

38. **Sitta carolinensis nelsoni** Mearns. Rocky Mountain Nuthatch. Common on the slopes and around the base of Bill Williams Mountain. A brood of fully grown young was seen July 8. The notes of this form are slurred and are given less clearly and sharply than the calls of the eastern subspecies.

39. **Sitta pygmaea pygmaea** Vigors. Pygmy Nuthatch. Common. A brood of young out of the nest was noted on July 10.

40. **Penthestes gambeli gambeli** (Ridgway). Mountain Chickadee. Common on Bill Williams Mountain.

41. **Hylocichla guttata auduboni** (Baird). Rocky Mountain Hermit Thrush. One was heard singing on July 14 high up on Bill Williams Mountain.

42. **Planesticus migratorius propinquus** (Ridgway). Western Robin. Robins were common in the town of Williams and in the surrounding region. Young just from the nest were seen on July 11 and 12.

43. **Sialia mexicana bairdi** Ridgway. Chestnut-backed Bluebird. Common. A few pairs were seen in the streets of town; and in the country this was the most common bluebird. Young fully grown but still in juvenal plumage were noted from July 10 to 14. On the latter date young were very common.

44. **Sialia currucoides** (Bechstein). Mountain Bluebird. Fairly common.

Biological Survey, Washington, D. C., May 26, 1920.

FROM FIELD AND STUDY

Late Fall Occurrence of the Lutescent Warbler at Berkeley.—A notable feature of bird life in the San Francisco Bay region during the current fall and winter season has been the loitering of Orange-crowned or Lutescent warblers (perhaps both) for a considerable period beyond their usual dates of disappearance.

On October 31, I found a bird dying in Faculty Glade on the University of California Campus, which was identified by Dr. Grinnell as a Lutescent Warbler (*Vermivora celata lutescens*). The specimen, now no. 39703, is preserved in the California Museum of Vertebrate Zoology. This postdates the previous record for this location by some 36 days.

On October 14, November 1, and November 15, and on intermediate dates not re-

corded, one bird and sometimes two, apparently like the Campus bird, were observed feeding in my rose garden on Grove Street near Cedar in Berkeley, and also in the high anise growing in a vacant lot next door.

On November 26 I observed a bird of this species in Carmel; this being the only instance at that place, in four successive Novembers in my experience. This bird seemed a trifle larger and may have been a Dusky Warbler.—BESSIE W. KIBBE, *Berkeley, California, December 5, 1920.*

The Black-throated Gray Warbler in Santa Cruz County, California, in Summer.—My friend, Mr. John Carroll, formerly an enthusiastic student of ornithology, recently sent me a number of bird skins. Among these is one of an adult male Black-throated Gray Warbler (*Dendroica nigrescens*) which he collected at Brookdale, Santa Cruz County, California, July 5, 1910. This, I believe, becomes the first summer record for that county.—MILTON S. RAY, *San Francisco, November 1, 1920.*

A Flight of Harris Hawks.—Mr. Frank Richmond, of El Centro, California, tells me that on October 22, 1920, he observed between 400 and 500 Harris Hawks (*Parabuteo unicinctus harrisi*). They were scattered over an area of about 80 acres in a field along the highway about half-way between Calexico and Heber. The birds perched on posts, hillocks and bare ground, and Mr. Richmond's attention was called to them by a party phoning that a flock of "eagles" was at that particular place. Mr. Richmond killed one of the birds to make sure they were not eagles.—W. LEE CHAMBERS, *Eagle Rock, California, December 6, 1920.*

Red-bellied Hawk Eats Caterpillars.—A Red-bellied Hawk (*Buteo lineatus elegans*) caught in a trap set near Firebaugh, Fresno County, California, was recently received by the Museum of Vertebrate Zoology. In the stomach there were a number of insect remains. These were sent to Dr. E. C. Van Dyke, who identified them as larvae of the hawk moth (*Pachysphynx modesta*). This caterpillar when full-grown is from two to two and one-half inches in length, of a light green color, with yellow lines on the head and along the sides of the body, and feeds on various species of willow. Eight of these caterpillars were found in the hawk's stomach together with the remains of two mole crickets (*Stenopelmatus*, sp.), one beetle (*Coniontis*, sp.), one ground beetle (unidentified), and some grass and pieces of wood that doubtless were picked up with the food.—HAROLD C. BRYANT, *Berkeley, California, November 24, 1920.*

Ring-necked Duck Again from near Corona, California.—I wish to report the capture of an adult male Ring-necked Duck (*Marila collaris*) on December 9, 1920, on the grounds of the Pomona Recreation Club, near Corona, California. The bird was shot by Mr. A. P. Hapwood, of Upland, and was brought to me for identification. The bird was one of a band of four, all likely of the same species. This duck seems to be a rather rare visitor in this locality, as during several years of hunting on this Club I only collected this species once (see CONDOR, XVIII, 1916, p. 85).—WRIGHT M. PIERCE, *Claremont, California, December 11, 1920.*

A Record for the Emperor Goose in Oregon.—On December 31, 1920, while collecting birds along the ocean beach at Netarts, Tillamook County, Oregon, I came upon a number of Glaucous-winged and Western Gulls around the mouth of a small creek, and in their midst was an Emperor Goose, *Philacte canagica*. When I drew nearer to the group and dismounted from my horse, the gulls took wing but the goose walked leisurely toward the ocean. When quite close I shot it. It proved to be a female. This, I believe, is the first published record of the species for Oregon.

Referring to the Emperor Goose, Coues (Key to N. Amer. Birds, fourth edition) remarks: "Its flesh is rank and scarcely fit for food." I found, however, that while less fat than other species of geese, the flesh of this individual was very palatable.—ALEX WALKER, *Blaine, Oregon, January 24, 1921.*

European Widgeon in Santa Barbara County.—I wish to report the taking of an adult male specimen of the European Widgeon (*Mareca penelope*) by Mr. R. G. Fernald

of Santa Barbara. The bird was shot upon the grounds of the Guadalupe Gun Club at Guadalupe, Santa Barbara County, California, January 14, 1921, and was shipped to me in the flesh for mounting. It was in full plumage, with a marked development of coloration. The carcass, and such parts of the skeleton as were not required for mounting, we forwarded to the University of California Museum of Vertebrate Zoology, with the hope that they might prove of value to the research department there.—A. E. COLBURN, *Los Angeles, California, February 5, 1921.*

A Feeding Habit of the Varied Thrush.—From a ground-floor window of the Museum of Vertebrate Zoology, one commands a view of a bit of ground made shady and leaf-matted by a little grove of planted *Pittosporum* which hugs the eastern side of the building. Abundant rains this winter have kept this leaf-mat water-logged.

Here on January 10, 1921, I watched a Varied Thrush, presumably subspecies *naevius* of *Ixoreus naevius*, as it foraged among the dead leaves. For a little of the time the bird was working within ten feet of my eyes.

Its constant mode was as follows: A short jump forward as it grasped debris in its beak, and a return jump so immediate that the whole was almost a single movement. A clump of debris, sometimes quite a clod, flew backward at one side or the other with each return jump. Usually the debris described a low arc, landing ten or twelve inches away, sometimes more, frequently less. Often successive plucks landed material on alternating sides of the bird with a slight corresponding change of body axis in each succeeding pause. Perhaps as often the leaves were landed for several times successively on the same side of the bird. Each pluck was followed by a moment of "frozen" pause, with head at about body level, after which the bird either repeated the operation or proceeded to devour the food which it had uncovered.

There was no movement of the wings and I was unable to perceive any intentional moving of debris by the feet. Naturally, tiny bits were occasionally disturbed by a claw in the backward jump. But, as a matter of fact, the feet rarely touched the leafy carpet once the bird had started, for it "swept" a rather clean swath down to dirt, like a carelessly shovelled path through the snow. This path was roughly three to five inches wide and decidedly tortuous, and the bird at times even reversed its progress to work over ground already cleaned, and to later start off on a side tangent.

Food seemed to be abundant as the bird picked up and swallowed frequently, apparently tiny morsels and good sized morsels, though I could not determine their exact nature. From its manner of picking and swallowing I guessed that it was eating such lower insect life as was uncovered, and possibly vegetational germinations which look so grub-like. Later I examined this ground, and found, when the leaves were scratched away, an abundance of worm and insect life, mostly larval, and some tiny plant germinations as well.

Naturally a "path" like this bird made would only occur in just such a situation, viz., a complete mat of dead leaves, water-soaked, and with abundant food concealed in and beneath them. Birds working on sod or bare earth concentrate their efforts on scattered spots, and often spend some moments on one hole, making the dirt fly as did the leaves.

On January 15, another bird which I watched from the same station, confirmed this manner of feeding. It moved even greater masses of material (variable moisture content no doubt affects the tenacity of the leaf mat), and at one time pulled away a leaf mass as big as its body. Once, when activity indicated a big morsel, a jay (*Aphelocoma californica oocleptica*) suddenly descended from the tree above, and would surely have alighted on the thrush's back had not the latter scooted off just in time. Two rods away the thrush at once proceeded with its feeding. I noted, too, that the jay had arrived an instant late, and after a disappointed scrutiny of the "diggings" it flew.—J. EUGENE LAW, *Berkeley, California, February 16, 1921.*

Anent Red-winged Blackbirds.—About a year ago, after considerable urging on the part of ornithological friends (?), I undertook a somewhat comprehensive study of the races of the *Agelaius phoeniceus* group, with the idea of possibly being able to find some more exact formulae for their determination and of perhaps being able to consolidate some of the present subdivisions. This work has been carried on as opportunity

permitted, but there have been many and often long-continued interruptions caused by field trips and various other matters demanding attention. However, hundreds of Red-wings have been examined and measured in various ways, and all these measurements have been carefully tabulated. Ratios of certain parts to others have been worked out in the endeavor to find some system that might assist us to describe or to determine the different subspecies with greater ease, especially in the winter plumages. The results of all this work have been far from satisfactory, from my own point of view.

Unfortunately the conclusion has been forced upon me that this undertaking must be abandoned, at any rate for the time being, for the reason that there is so much other work that must no longer be delayed, and which will occupy the greater portion of my time for months to come, with new matters constantly arising to take up what little time there might otherwise be to spare. Hence it seems to me that the only thing to do is to accept the situation gracefully and to leave the field clear to any ambitious mortal who may allow himself to be drawn into this alluring but treacherous current.

There is one point, however, that I would like to touch upon in this short paper before dropping the subject. This is that the Bi-colored Blackbird, *Agelaius gubernator californicus* Nelson, or *A. phoeniceus californicus* as I believe it should be (J. Mailliard, Condor, XII, 1910, p. 66), was described from an intermediate bird. The type specimen is a female, from Stockton, San Joaquin County, California, with the wing of a male tied to it (*Agelaius phoeniceus B. gubernator* [Ridgway] Belding). Now it has been shown (J. Mailliard, loc. cit.) that the Red-wing inhabiting the country at the junction of the Tuolumne and San Joaquin rivers, about forty miles south of Stockton, approaches the San Diego Red-wing (*Agelaius phoeniceus neutralis*); yet the bird found near Stockton in a similar type of country, with no climatic or topographical barrier between it and the Tuolumne junction country, comes a great deal closer to the form inhabiting the region about San Francisco Bay whose habitat extends, apparently, as far south as Monterey Bay along the coast, up the coast through Marin and Sonoma counties, and along the inner coast range as far north, at least, as Snow Mountain, Colusa County. The Stockton bird has enough of the characteristics of *neutralis* to be appreciably different; it shows itself to be more or less intermediate, having a heavier bill than the Bay region birds, less black on the middle wing coverts of the males and, on an average, heavier streaking upon the heads and under parts of the females. It is very unfortunate that the latter was not taken as the type of *californicus*, in which case it might be possible to separate out the Tuolumne River race, although this latter seems to be rather variable, as I have taken specimens which were practically identical with others from Stockton. In fact, the Tuolumne River bird appears to be just about midway between the *neutralis* of southern California and the San Francisco Bay Red-wing.

A singular angle in the distribution of these races is that while the intermediate approaching *neutralis* appears to be the one occupying the greater part of the San Joaquin Valley in south-central California, at the extreme southern end of this valley there is an irruption of what is practically *californicus*. Breeding birds from Buena Vista Lake, Kern County, are not easily distinguishable, if at all, from those breeding at Stockton, while birds from Tejon Pass, a little farther south, are also nearer to these than to *neutralis*, which occurs only a little farther south still. It looks as if this southern interpolation of *californicus* must have reached that territory via the valley of the Salinas River and San Juan Creek through the Carriso and Elkhorn plains, from which there are one or two low passes into the San Joaquin Valley.

In taking measurements of Red-wings I have tried to find some way of expressing in more definite terms the differences in the shape of bills, such as thickness for example, by taking the distance from the nostril to end of bill (placing the posterior leg of dividers or calipers, which must be finely pointed for such work, in the actual opening of the nostril to ensure always starting from the same point), then dividing this by two and measuring the width of bill exactly midway between the two points. While this is a very delicate measurement to get exactly, in conjunction with width at base and length of bill it gives a better idea of the slenderness or thickness of the bill than anything else I have tried out. Its chief fault lies in the fact that it is so small a dimension that one or two tenths of a millimeter mean a good deal, and the slight inaccuracies one is liable to fall into while making a measurement so difficult to get exact, are magnified in importance.

Yet when one finds that this measurement in groups of 11 males from Marin County, 10 from Sonoma County, and 8 from Suisun, Solano County, averages 2.6 mm. in each group, while the distance from nostril to end of bill averages respectively 15.1, 15.8, and 16.1 mm., you have something to compare with a group of males (11) from Stockton, which shows the former measurement to be 3.0 and the latter 15.4 mm., making it apparent that the bill of the Stockton bird is appreciably thicker than any of the above groups. Again, a Tuolumne River group of 13 males has 3.3 and 15.2 mm. for these measurements, showing a still heavier bill than the Stockton bird.

While the variations among different groups of the same species may weaken the significance of this data to some extent, it is still valuable when used in conjunction with other characteristics. However, not having had sufficient opportunity to carry on these studies to a conclusion I will not dwell longer upon the subject, but will close by saying that I shall be glad to be of service, if needed, to any one indulging in this pastime.—JOSEPH MAILLIARD, *California Academy of Sciences, San Francisco, January 21, 1921.*

Pileated Woodpecker versus Cooper Hawk.—On January 31, 1921, while we were on our way to Mirror Lake, Yosemite Valley, we heard the loud, ringing call of the Pileated Woodpecker. Looking up we saw two rather large birds dashing through the tree-tops. The dark bird with the white wing-patches we recoginzed at once as a Pileated; the lighter colored bird turned out to be a Cooper Hawk. A pursuit was apparently in progress, but as the birds dashed through the branches of the tall trees it was impossible to be sure which of the birds was the pursuer and which the pursued. Both birds quickly left our range of vision, but a little farther on we heard gentle tappings and soon located the woodpecker. The hawk was there, too, perched on a limb a few feet away. The woodpecker was drilling and prying off chips with apparent unconcern, while the hawk looked on with seemingly hungry eyes. While we were watching, the hawk flew to a branch a few feet above the woodpecker. Pileated tilted his head and gave the hawk a sidelong glance and then deliberately flew toward him and drove him from the tree. With the hawk gone, the woodpecker went on with his drilling as though nothing had happened. Perhaps the hawk saw visions of a good meal, but lacked the courage to attack a bird so well equipped to give battle.—CHAS. W. MICHAEL, *Yosemite, California, February 2, 1921.*

Two Unusual Winter Records for the San Francisco Bay Region.—The White-throated Sparrow (*Zonotrichia albicollis*), a rare winter visitor to this region, has once more appeared on the campus at the University of California, Berkeley, after an apparent absence during the winter of 1919-1920. A single individual was observed in company with two Golden-crowned Sparrows foraging in the shelter of shrubbery along Strawberry Creek, December 17, 1920.

On December 19, 1920, a stormy day, with heavy wind, at my home in Oakland, I was attracted by an unusual bird call. I could not identify the bird at this time because it flew too quickly into shrubbery, but subsequent visits proved it to be a Western Mockingbird (*Mimus polyglottos leucopterus*). Other known dates of this bird's visits to my garden, where it has spent most of its time in a large toyon berry bush, are December 26, 1920, and January 2, 16, and 24, 1921. Every visit has been announced by harsh, unmusical call notes.—MARGARET W. WYTHE, *Museum of Vertebrate Zoology, Berkeley, California, February 17, 1921.*

An Afternoon with the Holboell Grebe.—In the last issue of the Condor I read an interesting article on the nesting of the Pied-billed Grebe and its habit of carrying its young on its back. The writer of the article, Mr. Bancroft, says that the young were not carried under when the parent bird dived. Perhaps the following passage from my note-book, which treats of this Grebe habit, may be of interest:

On the afternoon of June 24, 1914, I loaded my canoe in the democrat and went with a friend to Silvermore Lake. After launching our canoe we found nine nests of Holboell Grebe (*Colymbus holboelli*), with 2/3, 2/2, 1/6, 3/1 and 1/4 eggs, respectively. While paddling around we noticed a Grebe swimming along with a young one on her back. At times the young bird was almost invisible beneath her feathers and wings as it moved

around. On our approach the parent bird dived with the young one on her back and carried it several yards under water. The young bird came up first and seemed bewildered or lost. We paddled up to it and my friend answered its plaintive peeping, whereupon it swam up to the canoe and into his open hand. We admired the curiously colored little fellow a while and then turned him loose.—A. D. HENDERSON, *Belvedere, Alberta, December 20, 1920.*

EDITORIAL NOTES AND NEWS

The Cooper Ornithological Club, by amendments to its constitution duly approved by both Divisions in January and February, 1921, has created an executive body to be known as the Board of Governors and to consist of the ex-presidents and the acting officers of the Club. This reorganization seemed expedient in view of the gratifying growth of the Endowment Fund, in order to insure this Fund to the purpose for which it is being created, namely, for the publication of contributions to ornithological knowledge. The Fund itself will insure continuity of output.

Dr. Miller raises some questions in his "communication" in another column which have important current bearing. He urges that great care be taken in levying criticism, either privately or in print, to couch one's terms in courteous phraseology, so that no feeling of personal resentment can possibly be aroused. With this ideal we heartily agree. But it is not an easy thing to accomplish in practice, no matter how carefully one may strive with this very point in view. We believe that honest, outspoken criticism *does* function usefully, even when published (and, we believe, Dr. Miller would readily grant this). Direct, clear criticism is needed now and then, from one authority, of the writings of another. This is stimulating and beneficial, to the lesser students in the same field as well as to each of the principals themselves. *If* the nicer proprieties have been observed in mode of expression, so much the better. We will welcome contributions to THE CONDOR which are wholesomely critical in nature.

Part one of *The Birds of California* has appeared, and parts two and three are announced to come out shortly, with others up to 30 or so to follow. Thus the work so long in hand by Mr. William Leon Dawson has begun to bring tangible results. And no subscriber who has seen this first installment, of 64 pages and a full complement of colored plates, photogravures and text-illustrations, will be disappointed. This is far and away the best thing, from an artistic standpoint at least, that has ever been published concerning western bird-life; and the text is informational and entertaining to a gratifying degree. We congratulate the author upon the high merits of this initial installment, and extend our earnest wishes that nothing will interrupt the continuity of issue until the entire work is published, with the same plane of excellence maintained throughout.

The natural history collections of Mr. Harold H. Bailey, formerly of Newport News, Virginia, have been moved to Miami Beach, Florida. They will there form the nucleus of a museum soon to be established in conjunction with a zoological park. Exhibits of mounted birds and mammals are planned, as well as a study collection. Five acres of ground have been allotted to the new project, and work has been started on the museum building. Mr. Bailey will be at the head of the museum and of the zoological garden. In connection with his new activities he already has well under way a book upon the birds of Florida, to be of similar nature to his "Birds of Virginia".

A letter received from Dr. Alexander Wetmore, now engaged in field work in Argentina for the United States Biological Survey, contains a suggestion of the many interesting discoveries he is making. Dr. Wetmore arrived at Buenos Ayres on June 21, in the winter season, and proceeded at once to extreme northern Argentina. There his work lay in "the strange and interesting area known as the Chaco, lying west of the Rio Paraguay and extending from northern Argentina north into Bolivia". Later he returned southward with the advent of spring, encountering various Argentine species then on their spring migration *southward* to their breeding grounds, and, still later, toward the end of July, certain North American shorebirds just arriving at their winter home. Brief mention of a falcon with "well-developed powder downs", of an "odd-looking Mimid" with "broad lateral apteria in the feather tracts of the sides of the neck that in life are bright orange yellow in color", and of a teal that habitually perches in trees, gives promise of future accounts of the anatomical peculiarities of tropical birds even more interesting than some Dr. Wetmore has already discovered in certain of our better known North American birds.

Fig. 14. ARETAS A. SAUNDERS

Mr. Saunders' "Distributional List of the Birds of Montana" was issued by the Cooper Ornithological Club under date of February 1, 1921, as no. 14 of the Pacific Coast Avifauna series. The author was for some years connected with the United States Forestry Service in Montana, and he was also for a time at the University of Montana Biological Station at Flathead Lake. His account of the birds of Montana consists largely of his own first-hand observations, but are supplemented by the published writings of other ornithologists. Three hundred and thirty-two species are listed as native to the state, as well as several others that have been introduced. The "List" is mainly concerned with the manner of occurrence of the various species, in just what part of the state they are found, and at what season of the year; but there are also extensive notes on migration, and descriptive accounts of the nesting of most of the birds. A number of half-tones figure many of the species, their nests and eggs, and also illustrate the character of the country in the life zones and faunal areas that are discussed.

Mr. J. A. Munro, of Okanagan Landing, British Columbia, has recently been appointed chief officer in charge of the enforcement of the Migratory Bird Convention Act in the western provinces of Canada. Mr. Munro's years of study of the avifauna of his region have rendered him peculiarly fitted to understand the problems involved in his new position. It will be gratifying to the ornithologists of the country to learn of this most appropriate appointment.

COMMUNICATION

A PLEA FOR PROFESSIONAL COURTESY

Some time ago, my studies in a certain field led to a discovery quite unexpected to me and of a more or less surprising nature to other men of similar interests. An account of the facts and a statement of conclusions was written for publication, but the manuscript was submitted to another investigator to whom I was personally a stranger. He examined the manuscript and returned it with helpful criticism and a most cordial expression of interest and of willingness to render aid in furtherance of the cause—a willingness which he has since repeatedly proven genuine. His assistance was publicly acknowledged with great pleasure on my part, a cordial relation between two fellow workers was established, and the scientific public was spared any controversy in print.

A few months ago I received a most courteous and friendly letter from an older and better known scientist offering suggestions on a brief note published over my signature. Instead of writing to me he might have published his criticism and done so in less friendly terms without violating the law of precedent. He took the more courteous way and spared the public a possible controversy.

Why are not all scientists as large as these two men? Why is there not among scientists that fraternal bond that exists among reputable physicians and is called professional courtesy? Why can not the reviewer present an honest difference of opinion and not impugn the motives or deride the conclusions of one who happens not to agree with him? Why can not the reviewed author be less sensitive or less inflammable, and measurably profit thereby? Or, failing in either of these points, would not our over-worked editors be justified in throwing out manuscripts that are controversial until the parties concerned had reached some agreement (to disagree, perhaps)?

If authors would settle their disputes between themselves and give us in our journals either the benefit of their conclusions or an amicable statement of points of divergence, we would feel that the scientific fraternity was reaping the benefit of cooperation rather than the whirlwind of dissention. May we not get together outside

our journal covers and reserve the printed page for results or, at least, for such statement of difference in opinion as will display good sportsmanship? I appeal for professional courtesy among scientists.

In this connection it is a pleasure to acknowledge a letter from Dr. C. Hart Merriam in which he advises the use of the vernacular name "lodge-pole pine" instead of "tamarack pine" and of "Sierra Chickaree" instead of "Douglas Chickaree" as published in my "Notes from the Region of Lake Tahoe" (CONDOR, XXII, 1920, p. 78). I accept the suggestion as being in the interest of better use of the vernacular name, and extend my thanks to Dr. Merriam.

LOYE MILLER, *Southern Branch, University of California, December 15, 1920.*

MINUTES OF COOPER CLUB MEETINGS

SOUTHERN DIVISION

DECEMBER.—Regular monthly meeting of the Cooper Ornithological Club (Southern Division) was held at the Museum of History, Science and Art, at 8:00 P. M., December 30, 1920. Members present: Mesdames Bicknell, Fargo, Law and Martin; Messrs. Appleton, Bishop, Brown, Chambers, Hanaford, King, Lamb, Law, Little, Miller, Nokes, Pierce, Rich, Robertson, Ross, Taylor, van Rossem, Wood and Wyman. Among the visitors were Mrs. Bishop, Mrs. Chapman and Miss Fargo. On motion by van Rossem, seconded by Lamb, Dr. Bishop's paper on birds of the Monterey Bay region was presented before business matters were taken up.

Following a short recess, minutes of the November meeting were read and approved, while those of the Northern Division for the same month were read by title only. Applicants whose names were previously presented were declared elected, on motion by Mr. Appleton that the Secretary cast a favoring vote. New presentations were: Dale T. Wood, 1470 E. Wilson Ave., Glendale, by Alfred Cookman; Mrs. C. H. Hall, 512 W. 30th St., Los Angeles, by Mrs. F. T. Bicknell; Dean Farnsworth, 1009 Manning St., Winfield, Kans., by Rev. P. B. Peabody; Elmer I. Applegate, Klamath Falls, Ore., by Mrs. F. M. Bailey; Howard W. Wright, 830 No. Orange Grove Ave., Pasadena, Calif., by A. J. van Rossem; W. Stanley Kitt, 129 So. 5th Ave., Tucson, Ariz., by Charles T. Vorhies; Richard Bramkamp, Banning, Calif., and Dr. F. D. West, Beaumont, Calif., both by M. French Gilman; John Beatty Hurley, 225 East E St., Yakima, Wash., by J. Hooper Bowles. The Northern Division sent names as follows: Mrs. Lewis Arnold, Lewis Arnold, Mrs. Lydia Wilcox, Mrs. Flora Dudley, Geo. B. Culver, Ynez Mexia de Reygadas, Wm. Duncan Strong, Harold Hammond Cozens, Mildred Kellogg, Mrs. Charles Gilman Hyde.

The nominating committee reported as follows: For President, Donald R. Dickey; Vice-President, L. H. Miller; Secretary, L. E. Wyman. Dr. Miller withdrew in favor of Mr. A. B. Howell. On motion of Dr. Rich the report was accepted and the committee discharged. Nominations were closed on motion of Mr. Lamb, seconded by van Rossem.

On behalf of the business managers, Mr. Law offered a resolution relative to certain constitutional amendments, a copy of which was submitted to the members. His motion that this resolution be adopted was seconded by Dr. Nokes, to be voted upon at the January meeting.

Inspection of a series of shore-bird skins, and the usual round of informal discussion, completed the session. Adjourned.—L. E. WYMAN, *Secretary.*

JANUARY.—Regular meeting of the Southern Division of the Cooper Ornithological Club was held at 8 P. M., at the Museum of History, Science and Art, January 27, 1921. Vice-President Rich presided, with others in attendance as follows: Miss Beers; Mesdames Bicknell, Brownlee, Fargo and Hall; Messrs. Appleton, Barnes, Bishop, Brown, Chambers, Colburn, Howell, King, Lamb, Little, Nokes, Pierce, Selwyn Rich, Ross, van Rossem and Wyman. Fourteen visitors were present.

Minutes of the December meeting were read and approved, followed by reading of those of the Northern Division. Persons whose names were presented at that meeting were elected, on motion by Mr. Chambers, seconded by van Rossem, that the Secretary be instructed to cast a favoring ballot. New presentations were: Dr. A. G. Prill, Scio, Ore., by Stanley G. Jewett; Albert F. Ganier, 2507 Ashwood Ave., Nashville, Tenn., and Mrs. D. Barnard Bull, Route A, Box 158, San Jose, Calif., by W. Lee Chambers; Mrs. A. J. French, Carlton, Ore., and Russell Reid, Bismarck, No. Dakota, by F. M. Bailey.

A letter from the Secretary of the Pacific Division, American Association for the Advancement of Science, announcing Berkeley as the meeting place for 1921, August 4th to 6th as the date, was read by the Secretary. Election of officers for the ensuing year was then taken up. On motion of Mr. Appleton, seconded by Dr. Nokes, the rules

were suspended and the Secretary instructed to cast the unanimous vote of the club for Messrs. Dickey for President, Howell for Vice-President, and Wyman for Secretary. Motion carried and nominees declared elected. Consideration of other business matters was postponed on motion of Mr. Lamb until after the Secretary's paper on "Birds of the Thunder Mountain Trail."

Following a short recess the revised constitution presented at the December meeting was read and after long discussion was adopted by a vote of nine to three. Adjourned.—L. E. WYMAN, *Secretary.*

NORTHERN DIVISION

DECEMBER.—The Northern Division of the Cooper Ornithological Club met at the Museum of Vertebrate Zoology, December 16, at 8 P. M. President Wright presided and those in attendance were: Mesdames Allen, Bennet, Bridges, Grinnell, Law, Pringle, E. D. Roe, G. T. Roe, Thomson, and Wythe; Messers. Bell, Bryant, Carriger, Cooper, Dixon, Emerson, Evermann, Grinnell, Lastreto, Law, Mailliard, McLean, Noack, Ritter, Storer, and Wright; Visitors: Dr. Bailey, Mrs. Evermann, Mrs. Reygadas, Miss Howitt, Miss Wythe, Mr. Martens, and Mr. Baker. The minutes of the November meeting were read and approved. Mrs. Lydia Wilcox, Mr. and Mrs. Lewis Arnold, Mrs. Chas. Gilman Hyde, and Mr. Geo. B. Culver were elected members of the Club. The seventeen names presented at the October meeting of the Southern Division were also approved. New proposals were: Mrs. Flora Dudley, Hotel Paisley, Geary near Mason, San Francisco, by Mrs. E. D. Roe; Mrs. Ynes Mexia de Reygadas, Room 401, Medical Bldg., Hyde and Bush, San Francisco, Wm. Duncan Strong, 2522 Ridge Road, Berkeley, Miss Mildred Kellogg, 2232 Piedmont Ave., Berkeley, and Mr. Harold Hammond Cozens, 3071 Bateman St., Berkeley, by Dr. H. C. Bryant.

Nominations for officers for the year 1921 resulted in the presentation of the following names to be voted on at the January meeting: For President, Mr. Curtis Wright; for Vice-President, Mr. H. S. Swarth; for Secretary, Mrs. J. T. Allen. All nominations were promptly closed.

Business completed, the club was privileged to listen to a paper by Prof. Wm. E. Ritter on "The Acorn-storing Habits of the California Woodpecker". The speaker deplored the existence of a great gap between laboratory science and the field observations of naturalists, and urged more complete tabulation of data obtained by careful observation of animals in the wild. Adjourned.—AMELIA S. ALLEN, *Secretary.*

JANUARY.—The Northern Division of the Cooper Ornithological Club met at the Museum of Vertebrate Zoology, January 26, at 8 P. M. President Wright presided and those in attendance were: Mesdames Allen, Blake, Burk, Flinn, Griffin, Grinnell, Law, McLellan, Reygadas, Rush, and Thomson; Messrs. Cox, Dixon, Emerson, Evermann, Grinnell, Lastreto, Law, Mailliard, McKibben, McLean, Miller, Storer, Swarth, and Wright. Visitors: Mrs. Calhoun, Mrs. Del Port, Mrs. Dixon, Mrs. Evermann, Mrs. Thomson, and Mr. Jencks. The minutes of the December meeting were read and approved. Mrs. Flora Dudley, Mrs. Reygadas, Mr. Strong, Miss Kellogg, and Mr. Cozens were elected members of the Club. New proposals were: Miss Una Boyle, 132 Laurel Place, San Rafael, by T. I. Storer; Mrs. Margaret Morse Nice, Norman, Oklahoma, by J. R. Pemberton; Mr. Reginald C. Robbins, Hot Springs Ave., Santa Barbara, by J. Grinnell; Mr. Carroll McGettigan, 2644 Filbert St., San Francisco, by Dr. Evermann; George H. Kellogg, 2526 Piedmont Ave., Berkeley.

A letter asking for two representatives on the Affiliations Committee of the Pacific Division of the American Association for the Advancement of Science was read. The president, instructed by vote of the Club, appointed Mr. Joseph Mailliard and Mrs. A. S. Allen to that committee. On motion of Dr. Grinnell, seconded by Mr. Mailliard, resolutions forwarded by Dr. Bryant relative to the taking of specimens, were referred to a committee appointed by the President (later announced to consist of Dr. Grinnell, Mr. Storer, and Mr. Swarth), said committee to report at the February meeting. Mr. Law then outlined plans for proposed changes in the constitution providing for more definite organization of the Club under a Board of Governors.

Mr. Lastreto presided during the election of officers, which resulted as follows: President, Mr. Curtis Wright; Vice-President, Mr. H. S. Swarth; Secretary, Mrs. J. T. Allen.

Business completed, Dr. T. T. Waterman outlined some of the Indian myths relating to the Raven, the Thunder Bird, the Coyote, and other birds and animals. After discussion and exchange of observations the Club adjourned.—AMELIA S. ALLEN, *Secretary.*

For Sale, Exchange and Want Column.—Any Cooper Club member is entitled to one advertising notice in each issue free. Notices of over ten lines will be charged for at the rate of ten cents per line. For this department, address W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California.*

WANTED, sets of A. O. U. Check-List nos. 190, 208, 211, 212, 214, 263, 387, 388, 619, in exchange, or will purchase same.—HENRY W. DAVIS, *Box 844, Atlantic City, N. J.*

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FOR EXCHANGE OR SALE—Duplicate and surplus books and pamphlets in ornithology and vertebrate zoology. Returnable mss. list to responsible parties only. List sent in order of application. Desiderata supplied when available. Wanted in exchange works in zoology, in any field, not reprints.—C. A. KOFOID, *East Hall, Berkeley, California.*

WANTED, FOR CASH—Copies of THE CONDOR, as follows:—Vols. V, nos. 1, 2, 3,; VI, nos. 1, 4; VII, nos. 3, 5, 6; VIII, nos. 2, 6; IX, no. 1; X, nos. 1, 4; XI, nos. 1, 2, 3, 5; XII, nos. 1, 2, 6; XIII, nos. 1, 2, 3; XIV, nos. 2, 3, 4. For sale or exchange—CONDOR, VIII, no. 3; IX, nos. 2, 3, 6; XVII, no. 4; XVIII, nos. 1, 2, 3. Many copies Nidologist; Oologist; Ornithologist & Oölogist; Osprey; The Guide to Nature; many years of The Auk; and very many bird pamphlets of value.—P. B. PEABODY, *Blue Rapids, Kansas.*

Two young men, now in college, are anxious to obtain positions on a collecting crew during the next summer vacation. Dates: June 5 to September 5. Anyone interested please write GORDON ALEXANDER, *Box 191, Fayette, Mo.*

WANTED for cash: Bendire's "Life Histories", vol. II.—ROSWELL S. WHEELER, *166 Athol Ave., Oakland, Calif.*

WANTED—Names of collectors who put up first class skins, who have American or foreign birds to trade for Illinois and Japanese birds.—H. K. COALE, *Highland Park, Illinois.*

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